Space Weather Forecast

Issued on Tuesday, 11 January 2022 at 13:22 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Increasing risk of moderate solar activity.

Analysis of Space Weather Activity over past 24 hours
Solar Activity: Solar activity was low in the last 24 hours, with one common class flare emanating from a region close to the southeast limb which is not associated with any sunspots. There are four numbered regions on the visible solar disc, with the most significant of these a large, mature, but inactive beta region in the southwest quadrant. A further beta region has developed in the northwest quadrant through the last 24 hours, but has shown little signs of activity. The two remaining regions are simple and currently stable alpha regions. No Earth-directed Coronal Mass Ejections (CMEs) have been observed.

Solar Wind / Geomagnetic Activity: Solar winds speeds have slightly elevated, with a declining trend as a solar fast wind eases. Total magnetic field strength has been weak, as has the important north-south component. Geomagnetic activity was Quiet to Unsettled (Kp 0-3).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) was at background with no solar radiation storms occurring.

Four-Day Space Weather Forecast Summary
Solar Activity: Solar activity is expected to remain mainly low or very low, but with an increasing risk of moderate activity as further sunspot regions are forecast to rotate onto the Earth-facing side of the Sun.

Solar Wind / Geomagnetic Activity: There are no Earth-directed CMEs. Slightly elevated solar winds are expected to decline towards background through 11 and 12 January as a coronal hole fast wind eases. The next fast wind is then expected to connect with the Earth on 15 January at the earliest, beyond the end of the current forecast period. Quiet to Unsettled geomagnetic activity is expected through the next four days.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to remain at background with no solar radiation storms occurring.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	1	1	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	10	15	20	20
Very Active	R3 to R5 X	No	1	2	2	2

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1
* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)						

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